June 18, 1940. C. F. JOHNSEN 2,204,934

DETACHABLE AND FLEXIBLE TENSION RIDING ROLLERS

Filed Feb. 6, 1939

Fig. 1.

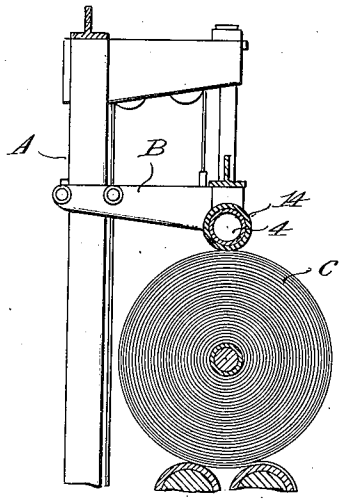


Fig. 2.

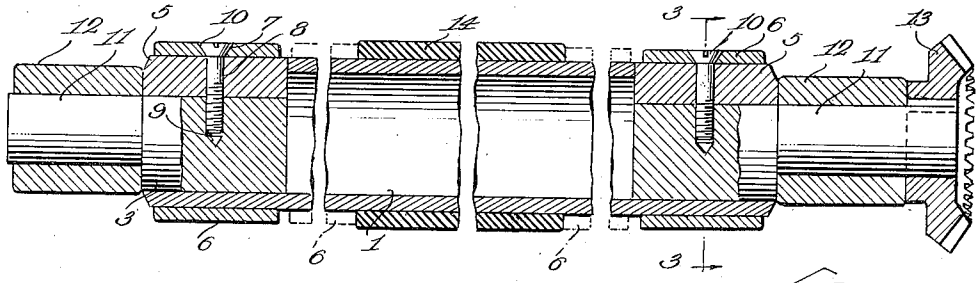


Fig. 5.

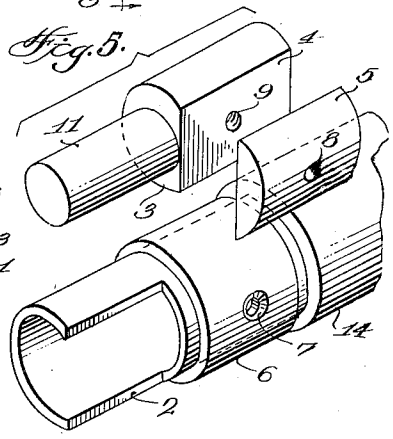


Fig. 3.

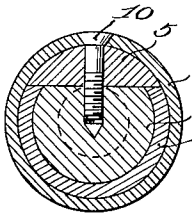
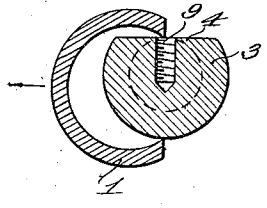


Fig. 4



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DETACHABLE AND FLEXIBLE TENSION RIDING ROLLERS

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Application February 6, 1939, Serial No. 254,975

1 Claim. (Cl. 64—5)

This invention relates to pressure or riding rollers for use on paper slitting and rewinding machines, and its general object is to provide a detachable and flexible tension riding roller to replace the usual solid hard steel type, now in general use, so as to overcome all of the disadvantageous features thereof.

An important object is to provide a roller of the character set forth, that is not only made up of detachably associated parts to facilitate ready application and removal thereof, with respect to the machine, but my roller includes an elastic riding surface of rubber or like yieldable material, preferably in the form of a sleeve, engageable with the cut paper rolls or coils, so as to provide an equal tension pressure thereon, regardless of the variance in width thereof, thus resulting in all of the coils being wound to a uniform diameter.

In order that the advantages of my roller over the usual steel riding roller will be clearly understood, it might be mentioned that by the use of the latter roller, some of the coils will be wound tight and others loose, due to the various widths thereof, thus causing considerable loss, as the loosely wound coils often have to be discarded or thrown away, but no loss in that respect is brought about by the use of my roller.

A further object is to provide a roller that includes an elastic riding surface which eliminates weaving and running together of the paper, especially when the machine is operating upon glazed or waxed paper, as my roller will not slip or become coated as does the usual steel roller.

Another object is to provide a roller which, because of the advantageous features thereof, including those mentioned, will materially increase the speed, accuracy and quality of production of paper slitting and rewinding machines, and my roller can be easily and expeditiously applied to any type of machine of that character.

A further object is to provide a detachable and flexible tension riding roller that is simple in construction, inexpensive to manufacture and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a vertical sectional view taken through the upper portion of a slitting and rewinding machine, with my roller installed thereon and in use.

Figure 2 is a longitudinal sectional view taken through the roller, with parts in elevation.

Figure 3 is a sectional view taken approximately on line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is a transverse sectional view illustrating the manner of removing the tubular body from the stub shafts, to facilitate the application and removal of the roller with respect to a machine.

Figure 5 is a perspective view of the detachably associated parts.

Referring to the drawings in detail, the letter A indicates the roller carriage frame of a rewinding machine of a certain type, and B the usual carriage for the pressure or riding roller for engagement with the paper rolls or coils C. While I have illustrated my roller as being installed on a certain type of rewinding machine, it will of course be understood that it can be used with any type, in that it can be applied and removed with respect thereto in an easy and expeditious manner, due to the detachable association of the respective parts thereof, as will be apparent upon inspection of Figure 5.

The roller in the form as shown includes a hollow cylindrical or tubular body 1 having its end portions cut away for a portion of the circumference thereof to provide recesses 2 extending inwardly from the ends of the body, for a purpose which will be presently described, and mounted in the ends of the body are stub shafts 3, for slidable fitting association therewith, the stub shafts being cut away to provide flat faces 4, for registration with the recesses 2 and for disposal flush therewith, as best shown in Figure 3. Receivable in the recesses 2 and having flat faces for engagement with the faces 4, are blocks 5 provided with rounded outer faces following the curvature of the wall of the body 1, so as to fill the recesses and for disposal flush with the body wall, as also best shown in Figure 3.

Mounted for slidable movement to the full and dotted line positions of Figure 2, on the tubular body 1, are collars 6, provided with countersunk holes 7 therein for registration with holes 8 in the blocks 5 which in turn register with threaded bores 9 in the stub shafts 3 for receiving screw bolts 10, to secure the parts of the roller assembled, as clearly shown in Figure 2, and by providing the detachable associated parts, it will

be obvious that such allows for the application and removal of my roller with respect to a machine in an easy and expeditious manner.

The stub shafts include trunnions 11 having keyed or otherwise secured thereto bearings 12, for mounting my roller in the carriage B, in the usual manner, and keyed or otherwise secured to one of the trunnions is a drive gear 13.

While the detachable feature of my roller is important, as will be apparent, an extremely important feature, is the fact that I provide a covering of elastic material such as soft rubber or the like, in the form of a sleeve 14 that may be adhesively secured to the body 1, but in any event is secured thereon to surround the same for the purpose of providing a flexible and yieldable riding surface, to eliminate the many disadvantageous features of the usual hard steel riding roller, as set forth in the objects of the invention.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided such changes fall within the scope of the appended claim.

What I claim is:

An elastic riding surfaced roller for a paper slitting and rewinding machine, comprising a tubular body having its ends cut away to provide longitudinally extending recesses therein, stub shafts mounted in the ends of said body and having flat faces disposed flush with said recesses, blocks having flat faces engageable with the first faces and outer surfaces shaped to follow the curvative of the body, collars slidably mounted on said body for disposal about the blocks, and means extending through said collars, blocks and into the stub shafts for detachably securing the latter to the body to facilitate the application and removal of the roller with respect to the machine.

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